

The psychological reality of hidden lexical entries: Evidence from Hebrew

1. **Introduction.** Reinhart (2002) argues that all one-place unaccusatives are derived from their corresponding transitive forms via a lexical operation reducing the Cause role:

(1) (Hebrew) $\dot{s}avar V_{(Cause, Theme)}$ → $ni\dot{s}bar V_{(Theme)}$
 break- TRANS-PAST break-UNACC-PAST

The fact that the vocabularies of languages do not always include the transitive forms from which the existing (one-place) unaccusatives are supposedly derived is not perceived as a counter argument for the above. Rather, according to Reinhart (2002) and Horvath & Siloni (in press), the lexicon of a given language may include *frozen entries*: lexical entries that cannot be inserted into syntax, and hence are not part of the actual vocabulary of this language. However, being part of the mental lexicon, they can feed the aforementioned lexical operation. This type of argument is made plausible by the observation that all one-place unaccusative verbs have a transitive alternate in one language or another (see 2), together with the assumption that lexical information is largely universal.

(2) a. Hebrew: *he'lim* – *ne'elam* b. Hungarian: *elhervaszt* – *elhervad*
 caused-vanish vanished cause-wilt wilt

The existence of what I refer to as *hidden lexical entries* (i.e. gaps between the mental lexicon and the vocabulary of actual words of a given language) has also been assumed by early lexicalist works (Halle 1973, Jackendoff 1975). Moreover, as I will argue, a mechanism of this type is essential for any theory which includes universal generalizations regarding derivational relations between conceptually close words. Nevertheless, the assumption of *hidden lexical entries* is often perceived as an unfalsifiable theoretical tool, lacking psychological reality.

2 **Goal.** In light of the above, the goal of this study is to show that the assumption of *hidden lexical entries* is not unfalsifiable and that there is a way to provide independent evidence for them. I will argue that the existence of a lexical entry is traceable even when there is no direct evidence for it (i.e. no parallel word) and will present an experiment dedicated to examine the psychological reality of hidden lexical entries of the type assumed by Reinhart (2002) and Horvath & Siloni (in press), namely *frozen lexical entries* of transitive verbs .

3. **Experimental design.** Horvath & Siloni (in press) distinguish between three types of unaccusatives: (i) derived from a non-frozen transitive verb (ii) derived from a *frozen* transitive verb (iii) underived (two-place) unaccusatives with no transitive counterpart in the mental lexicon, not even a frozen one. Based on this, I make the following distinction between three types of logically possible *transitive verbal concepts*: (I) with both a corresponding lexical entry and a corresponding vocabulary item (II) with a *frozen* corresponding lexical entry but with no corresponding vocabulary item (III) with neither a corresponding lexical entry nor a corresponding vocabulary item. The *verbal concepts* (I)-(III) are related to the unaccusatives (i)-(iii) respectively. **The experiment** is based on an idea I named *The Gable* (**Graded accessibility by lexical encoding**) *hypothesis* according to which, if frozen lexical entries do exist, then transitive verbal concepts of type (I) are expected to be more

accessible/ salient in the mind of speakers than transitive concepts of type (II), which, in turn, are expected to be more accessible/salient than transitive verbal concepts of type (III) (I>>II>>III). Thus the task was designed to detect the salience level certain *transitive verbal concepts* have for speakers.

Participants: 20 adult Hebrew speakers. **Task:** In a controlled environment, after a detailed explanation and a trial session, subjects were individually presented with short stories which established the status of a person/object as the causer of some occurrence. In each story the occurrence was described only close to the end, using a sentence with an unaccusative verb (an '*unaccusative sentence*'). The very last sentence of the story described an outcome of the occurrence (an '*outcome sentence*'). Subjects were then asked to give a 1- 8 rating of how much they accept the participant that was established as the causer to be: "the executer of a specific action" that resulted in whatever the 'outcome sentence' described (see a translated example below). The reasoning behind the task is that the more salient the relevant transitive verbal concept is for speakers, the higher they will rate the causer as the executer of a specific action. **4. Results and conclusion.** The results show that indeed transitive verbal concepts of type (I) are more accessible than those of type (II) which, in turn, are more accessible than those of type (III): causers of occurrences related to unaccusatives of type (i) were rated as significantly more acceptable than those related to type(ii), and, most importantly, those related to type (ii) were significantly more acceptable than those related to type (iii). These results support the existence of *frozen lexical entries* and the study as a whole shows that the assumption of hidden lexical entries is not unfalsifiable.

→**Task example:** Yosi and Moshit are twins. They are a bit similar and a bit different. Yosi is a clumsy boy who always drops stuff and Moshit is not a clumsy girl at all. In fact, teasing Yosi about his clumsiness is Moshit's very annoying habit. Last week they were on their way to Grandma's house for a holiday dinner. Yosi carried the cake and his sister Moshit carried a dish made out of glass that contained some fish. The dish was cold, slippery and heavy. Moshit felt how it begins to slip out of her grip.

The dish **fell** on the sidewalk. Yosi gloated. •On a scale of 1-8, how acceptable/conceivable for you is to consider Moshit as the executer **of one specific action** that resulted in the gloating of Yosi?

→**Unaccusatives used in the experiment-** Type (i): *hitkavec* "shrank", *nafal* "fell", *Hitkamet* "got wrinkled", *hitlaxlex* "got dirty", *nigmar* "was finished", *nišbar* "broke", *nisraf* "got burnt", *nirtav* "got wet". Type (ii): *hirkiv* "got rotten", *kamaš* "withered", *naval* "wilted", *daha* "faded", *hixmic* "turned sour", *hixlid* "became rusty", *hitrofef* "loosen". Type (iii): *medaber* ('el) "appeals (to)", *mešane* (le) "matters (to)", *xamak* (me) "escaped from", *xaser* (le) "missed (to)", *xore* (le) "unpleasing (to)", *maca-xen* (be-einey) "appeals (to the eyes of)".

→**References:** Halle, M. (1973). *Prolegomena to Theory of Word Formation*. Linguistic Inquiry 4.1:3-16|Horvath, J. & Siloni, T. (in press). Active Lexicon: Adjectival and Verbal Passives. *Generative Approaches to Hebrew Linguistics*. G. Danon, S. Armon-Lotem, and S. Rothstein (eds.). Amsterdam: John Benjamins Publishers|Jackendoff, R. (1975). *Morphological and Semantic Regularities in the Lexicon*. Language 51: 639-671|Reinhart, T. (2002). *The Theta System: an Overview*. Theoretical Linguistics 28: 229-290